## **CLAIMS**

Therefore, having thus described the invention, at least the following is claimed:

circuit for detecting errors in the synchronization of a DTE (data terminal equipment) data signal with a DCE (data communication equipment) clocking signal, in a communication environment wherein the DCE interfaces the DTE to a communication channel at an interface rate determined by the DCE clocking signal, the circuit comprising: 4 a master clock producing a master clock signal having a frequency greater than 5 the frequency of the DCE clocking signal; 6 7 Time dust that 1,1 signal; ]; ≟ 10 1,1,1 11 H. 12 13 14 15 between said first time and said second time. 16

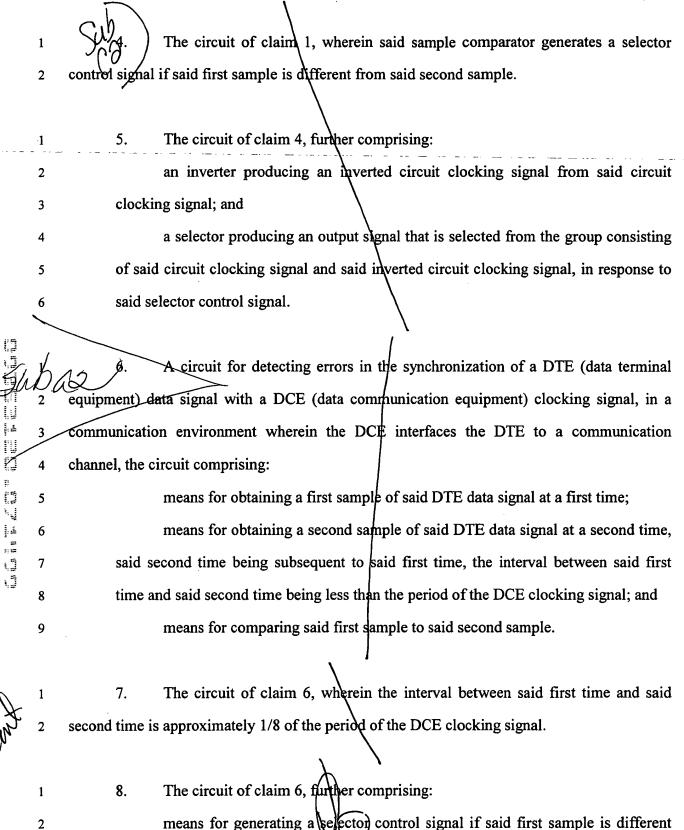
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a clock generator deriving a circuit clocking signal from said master clock signal, said circuit clocking signal having the same frequency as the DCE clocking a sample enable generator for generating a first sample enable signal at a first time and a second sample enable signal at a second time; and a sample comparator for using said first sample enable signal and said second

enable signal to obtain a first sample of said DTE data signal at said first time and a second sample of said DTE data signal at said second time, and for determining whether the DTE data signal/has undergone a transition during the time interval

- The circuit of claim 1, wherein the frequency of said master clocking signal is 2. approximately 8 times the frequency of said DCE clocking signal.
- 3. The circuit of claim 1, wherein the time interval between said first time and said second time is approximately 1/8 of the period of said DCE clocking signal.



from said second sample.

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<u> </u>	$b_{2}^{1}$	9. The circuit of claim 8, further comprising:
Ju	2	means for inverting said DOE clocking signal in response to said selector
/	3	control signal.
	1	10. The circuit of claim 9, further comprising:
	2	means for transmitting said inverted DCE clocking signal from said DCE to
	3	said DTE in lieu of said DCE clocking signal.
	1	11. A method for detecting errors in the synchronization of a DTE (data terminal
<b>#</b> 5	2	equipment) data signal with a DCE data communication equipment) clocking signal, in a
	3	communication environment wherein the DCE interfaces the DTE to a communication
the first for the contract that the	4	channel, the method comprising the steps of:
	5	obtaining a first sample of said DTE data signal at a first time;
	6	obtaining a second sample of said DTE data signal at a second time, said
: 13	7	second time being subsequent to said first time, the interval between said first time and
And the street of the street o	8	said second time being less than the period of the DCE clocking signal; and
	9	comparing said first sample to said second sample.
	1	12. The method of claim 11, wherein the interval between said first time and said

iid second time is approximately 1/8 of the period of the DCE clocking signal.

> 13. The method of claim 11, further comprising the step of: generating a selector control signal if said first sample is different from said second sample.

The method of claim 13, further comprising the step of:

inverting said DCE clocking signal in response to said selector control signal.

15. The method of claim 14, further comprising the step of:

transmitting said inverted DCE clocking signal from said DCE to said DTE in

3 lieu of said DCE clocking signal.

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